



City of Branson Sustainability:

2013 Summary



On Behalf of Branson
Sustainability Council

Mona Menezes
Environmental Specialist
March 2014



FIVE YEARS:
***“Seeing Through a
Lens of Sustainability”***



- ◉ **Letter to Department Heads from City Administration:**

- ◉ This will be a work in progress, as we consider new and more efficient ways of operating that can save energy, resources and tax dollars.”
- ◉ “Sustainability requires that the vision permeate our culture, giving everyone an opportunity to participate and contribute, define problems and offer solutions.
- ◉ To that end we will all be part of the team to launch the vision and plan, set goals and assess benchmarks.”

Our Beginnings...

- In 2009
 - City Administrator asks all Department Heads to appoint Sustainability Council Members
- 2010
 - Board of Alderman adds as Strategic Goal

+PEOPLE
+PLANET
+PROSPERITY

= TRIPLE BOTTOM LINE

Since Then Totals:

Recognized 23 City Staff Projects

- 10 **Green 4 Green**
 - Cash Incentive Awards
 - \$100
 - Each project saves \$1000/annually
- 8 **Green Grants** Projects
- 5 **“Think Green”** Awards

Implemented Existing Air-lock



- Above: Two sets of doors arranged in an airlock common in public building entrances.
- Sustainability = Smart Thinking
 - Not Rocket Science
- Minimize loss of heat/cooling

ALL DEPARTMENTS

GO!



Going



Gone



Partnering with Employees & Citizens as Stewards of Our Community's Resources



○ Resourceful -

- Media, Web-pages
- Social Media, Newsletters
- Honor-system Library - to share details, literature, materials, publications & ideas

○ Reduction -

- Coordinate “Vehicle Pool”
 - Reduces vehicle-purchases, expenses
 - Use Hybrid vehicle for fuel economy
 - + 27% fuel economy

Commitment to

Health



Fitness



Well-being

= Sustainable Community

Insurance premiums down 5% due to safety and wellness
Savings: \$75,000.00.

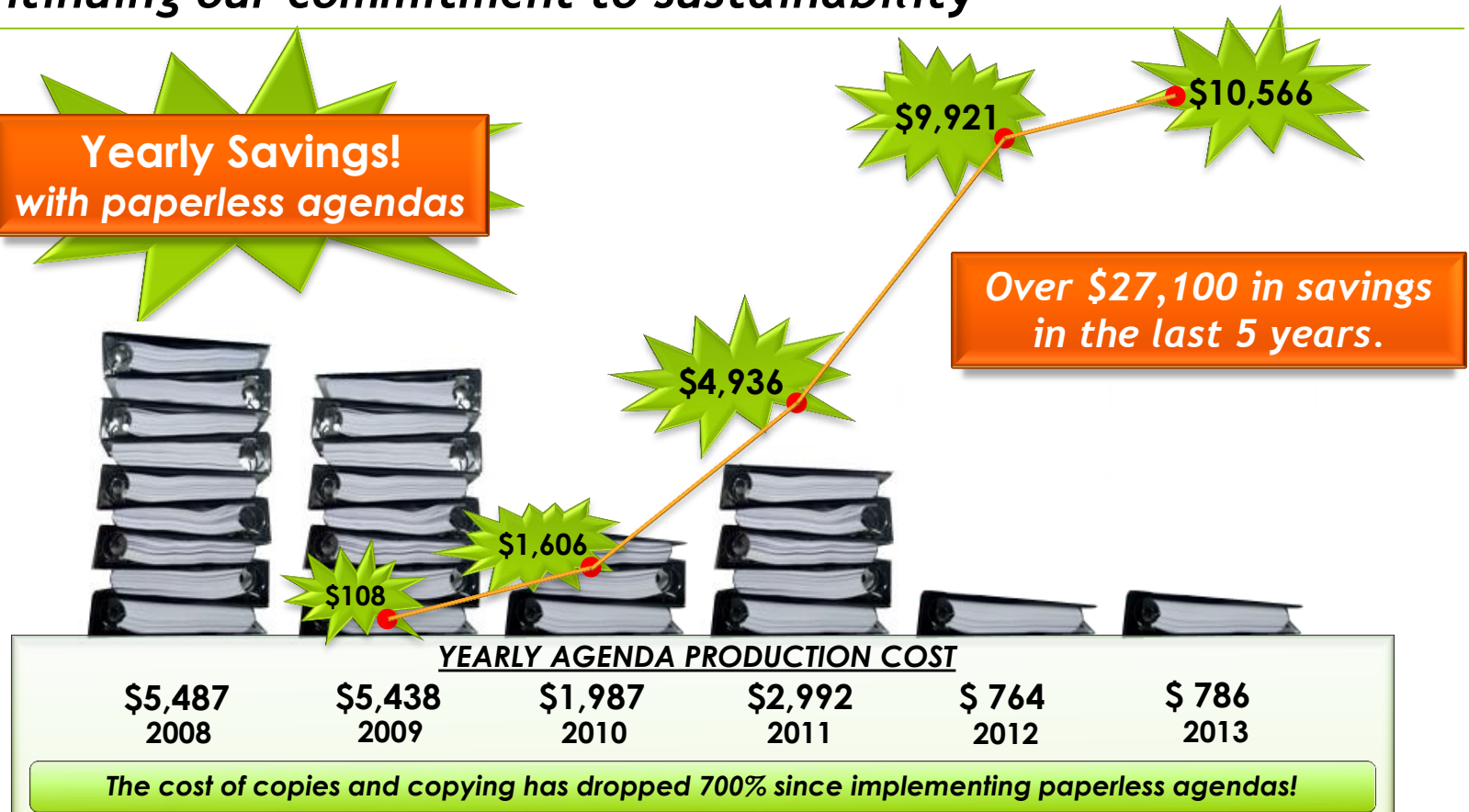
CITY OF BRANSON



**A HEALTHY CITY
WORKING FOR A HEALTHY PLANET**

Continuing our commitment to sustainability

**Yearly Savings!
with paperless agendas**



MORE PAPER SAVINGS:

- Court's daily report to Finance reduced from 40 pages to 7 pages.
 - Nearly 8,000 pages eliminated per year!
- More fillable forms on-line. Reduces wasteful pre-printing of forms; easier to email (no scanning).
- More city-wide procedures, indexes and documentation available on the G drive.

- **More beet juice for the roads**
 - Effective in melting ice and snow
 - Completely bio-degradable
 - Less impact on the environment/water than salt and chemicals
- Increased ratio of gravel vs salt for less environmental impact on the streets.
- Repaired Police HVAC units for healthier air quality
- Covered Salt Storage Equipment
 - Eliminate stormwater runoff from salt

ROARK CREEK TRAIL



- Ledbetter Section of Trail
 - Currently being paved: 2,797 ft.
 - Trail easement: 2,226 ft
- TOTAL 5,023 ft

Engineering/Utilities

●PAHs

- City of Branson does NOT use coal tar sealants on any city parking lots.
- Coal tar sealants release PAHs (polycyclic aromatic hydrocarbons) into local lakes and streams.

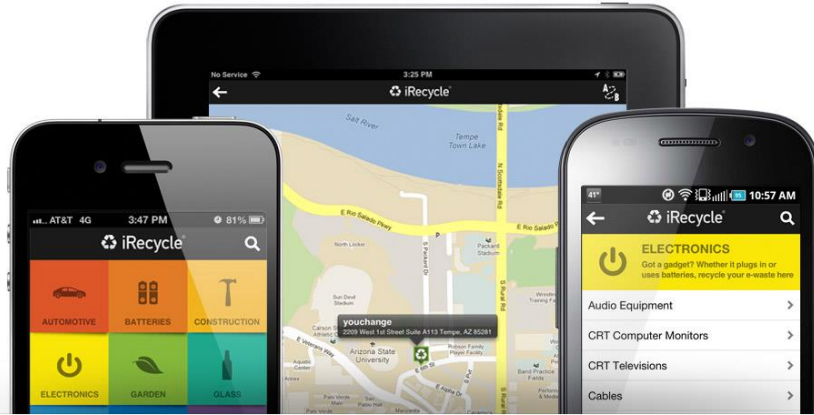
- New generator at Lift Station 25
 - Natural gas instead of diesel fuel
 - 50% reduction in greenhouse gas emissions.
- Low glare LED lights installed at new lift station
 - Reduced energy use,
 - Lower carbon emissions
 - Minimizes night glare into sky and neighboring
- New pump controller installed at Lift Station 9
 - Energy management features allows staff to constantly monitor efficiency of pumps and schedule maintenance, when needed.



Branson Recycling Goes Hi Tech

- Phone App
 - iRecycle
 - Branson Downloads
- National Website
 - Earth 911





FACEBOOK

- Branson Environment and Recycle
- 271 followers
- Avg: 648 views/week
- Over 11,000 interactions in 2013

MOBILE APP

- iRecycle
- Branson map to RC
- All items accepted
- Hours
- Branson RC Brochure

GET CONNECTED

Recycling to Hit 10 million Pounds in 2014

- Currently: 9,852,000 lbs.
 - =285 Semi-trucks
 - Stretched end to end
 - 3.8 miles
- From Downtown Branson to Presley's Theater

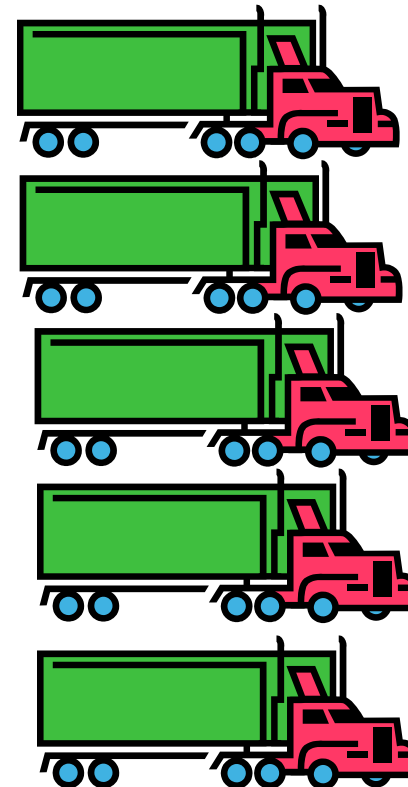


PLUS 125 tons of GLASS!

From Branson Airport to Springfield Airport....



5 Semi-Truck Loads



Household Chemical Collections: **The Water Connection**

- 5.1 tons/year/average
- 35.7 tons in 7 years
- Only 11 collection sites in MO
- All large cities
- Serving all of Taney Co. (Only)
- Shared cost: Forsyth, Hollister, Taney Co.

- It's about the water
- Not in sewer system
- Not in stormwater
- Not in soil
- Cost: \$1200/ton/avg

2010

- 985 gallons
- 18 drums
- \$1034 to dispose



2011-12-13

- 2373 Gallons
- 43 Drums
- (\$2482) Disposal



WASTE TO ENERGY

At the Branson Recycle Center
USED MOTOR OIL = HEAT



← THIS
BECOMES
THAT
→



YOUR USED MOTOR OIL IS OUR HEAT, IN A WASTE-TO-ENERGY FURNACE PROVIDED THROUGH A GRANT.

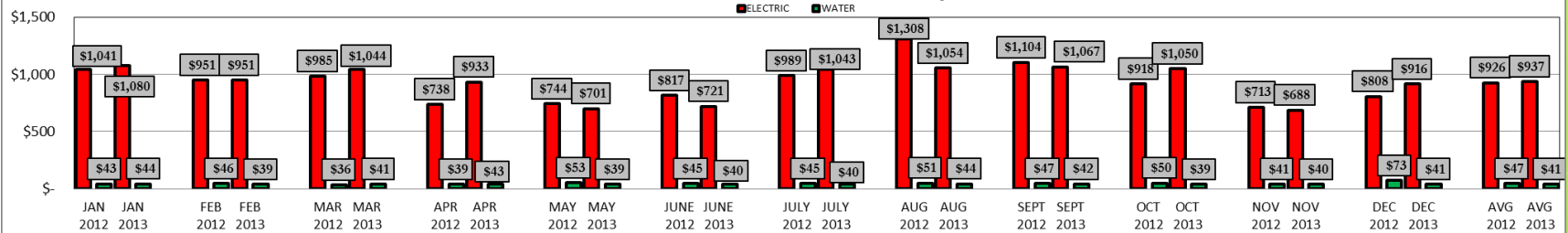
WE USED TO HAVE TO PAY TO DISPOSE OF UNWANTED OIL FROM TANNEY COUNTY RESIDENTS. NOW WE USE IT TO HEAT OUR RECYCLE CENTER.

EVERYBODY WINS!

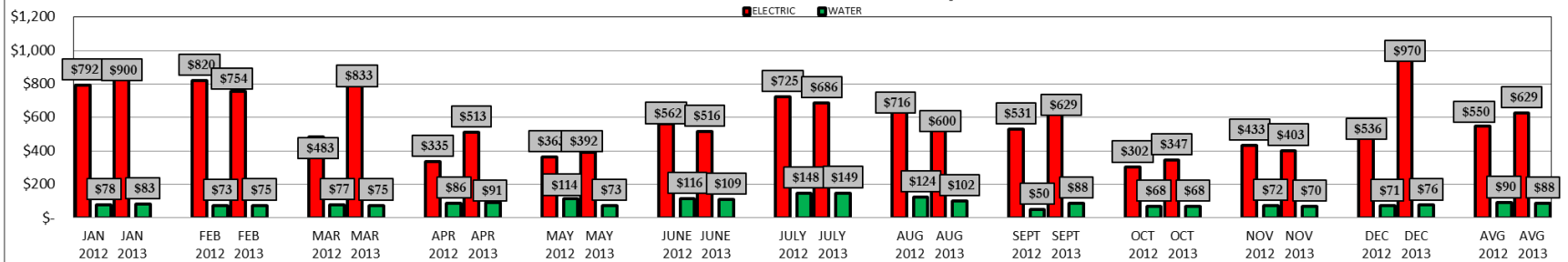
FIRE DEPARTMENT

Chief Ted Martin/ Jan Denega

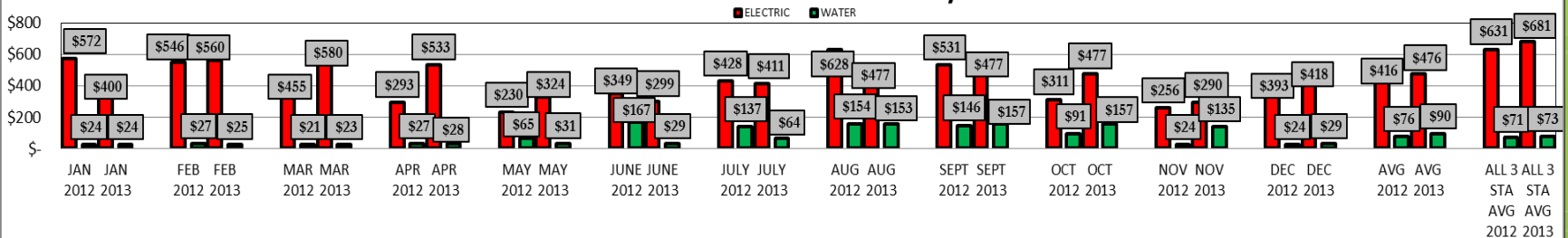
STATION 1 UTILITY USAGE - 2012/2013



STATION 2 UTILITY USAGE - 2012/2013



STATION 3 UTILITY USAGE - 2012/2013



Utility Tracking

We continue to track utility usage on a monthly basis, reminding employees to be "energy smart". Despite the extreme weather conditions that we were up against in 2013, our utilities only went up slightly from 2012. Electric 7.9% and water 2.9%, over-all, for all 3 stations. Comparing the over-all average from 2011 and 2013, our usage of electric and water was exactly the same.

Sustainable Use of Recycled Trees



Fire Engineer Josh Boehm uses mulch made from downed trees after the Leap Day tornado in 2012 to landscape the Fire Station.





Urban Garden Continues to Thrive



Fire Station 2:

- Expanding Garden
- Makes for healthier employees!



Fire Station 3:

- Started garden in 2013
- Saves money on 3 daily meals.



New Servers: Increased Efficiency Lower Cost To Operate

(New
Servers)
Cisco UCS
M3



(OLD SERVERS)
Dell
Poweredge
R710



Key
Comparisons

Server	Dell Poweredge R710	Cisco UCS C220 M3 (E5-2650)	Difference
Energy Star Rated Watts/Hour per Server	291.1	229	62.1
Number of Servers	3	2	1
Total Watts Per Hour	873.3	458	415.3
kW/h	0.8733	0.458	0.4153
Cost per hour (\$0.11/kWh)	\$0.0961	\$0.0504	\$0.0457
kWh/day	20.9592	10.992	9.9672
Cost per day	\$2.3055	\$1.2091	\$1.0964
kWh/Month (31 Days)	649.7352	340.752	308.9832
Cost per Month (31 Days)	\$71.47	\$37.48	\$33.9882
kWh/Year	7650.108	4012.08	3638.028
Cost per Year	\$841.51	\$441.33	\$400.1831

- ❖ 1 Less Physical Server
- ❖ 415 Watts/Hour Difference Usage
- ❖ Saves \$400 dollars/yr in electricity

New HVAC



Our new server cooling system

- Uses 3 Ton AC unit
- Instead of keeping the 110 Ton system running through the night.
- Saves the city **\$1,650 a month.**
- Yearly Savings of **\$19,800.**



Green for Green Award: Recycling Industrial Electronics

**THEN:
Sold at Auction
\$50**

**NOW:
Recycled
\$1063.00+**



- **100 Watt Metal Halide Wall Packs**
- **Replaced with 27 Watt LED.**

- **Savings: \$200/yr annually**

- **250 Watt Conventional**
- **Replaced with 20 Watt LED.**



24 Motion Sensors Installed



**Auto-off in
Unoccupied
Rooms**



Water Bottle Refill Stations

- Locations:
 - RecPlex – 48,407 refills/yr
 - Stockstill Park
 - RecPlex Softball Fields
- Benefits:
 - Paid for with Sustainability Grant
 - Less waste stream
 - Decreases litter in parks





BEFORE



AFTER

Using Sustainable/Recycled Materials: Recycled Plastic + Sawdust

- Benefits:
 - Longer lifespan than wood
 - Never rots or splinters
 - Eliminates annual maintenance/repairs



100% Recycled Plastic Benches

- Locations
 - Lakeside Forest (4)
 - Downtown Branson
 - (Bus stop behind Dick's 5 & 10')
- Benefits:
 - Longer lifespan than wooden benches
 - Never rots
 - Looks great and reduces maintenance/repairs throughout the year
 - Indestructible



LED Scoreboards

● RecPlex Softball Fields

Stockstill Park Fields



● Benefits:

- Uses 1/28th of energy of incandescent bulbs
- Reduces maintenance/repair by more than 1 week
- Remote controlled by umpire
 - Eliminates expense of hiring scorekeeper

2013 Efforts...

- Arbor Day
- ArborFest
- Lakeside Forest Planting



- Branson Hills Parkway Planting
- Green Initiative Awards
- Beautification Awards



Improving MPG's in patrol vehicles;

Older Ford Crown Victorias get an average of	9 mpg
Newer Ford Interceptor sedans are getting approx.	12 mpg
Newer Ford Interceptor Utilities are getting approx.	13 mpg
Can Am's are getting approx.	19.5 mpg

Police Eco-Boost/Fuel Savings

\$ 5,477/YR

New Police Bikes

?



Prescription Med Drop Box

- 2012 collected 354 pounds
- 2013 collected 658 pounds
- 54% Increase
- Kept drugs out of the trash
- Not flushed into sewer
- Continuing to go paperless:
 - 911 calls now all filed electronically
 - Criminal History and D.O.R information for warrants
 - Reports for Investigations Division now reviewed electronically
 - Lab Requests for evidence



HR Accomplishments in 2013.

- Health and Wellness:
 - The “People” part of Triple Bottom Line
 - 5% reduction in insurance premiums
 - \$75,000 in 2013 (Prosperity Part of Triple Bottom Line)
 - Designated “Fit-Friendly” Organization
 - Meets American Heart Association Standards
 - All city facilities “Tobacco Free”
- Scan and email all employment applications to the applicable hiring departments.
 - Hiring department decides which applications to print,
 - Eliminates unnecessary copying/printing of applications.
 - In 2013, it eliminated at least 5,290 copies
Greatly reduced paper and ink purchases
- Active on Sustainability Committee



**We work smarter: Copy and Print Less; Store and Send Electronically More.
We Reduce, Reuse, and Recycle whatever we can.**

HR Goals for 2014

VIRTUAL SUPPLY CABINET

- Implement *VIRTUAL SUPPLY CABINET*
- Share and Exchange program
 - Employee intranet site
- Eliminate the unnecessary ordering of office supplies or equipment.
- Special Events Committee and HR Orientation Classes
 - Reusable/recyclable cups



WE DO IT ALL
— WITH A SMILE!



All of this ↑,
will be available
on this →.



SEWAGE SLUDGE:

Waste?

OR

Resource?



- Tri-Lakes Bio-Solids Coalition Construction Project at Cooper Creek
 - Currently Land Apply 5,261,000 gallons of Class B Sludge.
 - Dryer facility will convert into approx. 667 dry tons of class A Biosolids:
 - Nutrient Rich
 - Pathogen Free
 - Valuable Compost
 - Biosolids look like this





Old Roads Recycled into New Roads

○ RECYCLING TREES & ASPHALT

- Recycled asphalt builds road beds to Lift Stations.
- Big Thank You to Street Department Crews

- Recycled debris from citywide cleanup becomes landscape mulch at treatment plants.



Trees and Limbs Become Mulch

Sustainability \$\$avings Make Sense:

○ LED lighting at Water Treatment Plant:	\$ 200
○ Organic produce grown at Fire Dept	\$ 600
○ Compact fluorescents at Water Treatment	\$ 250
○ Paperless Board Meetings/Clerks Office	\$ 10,556
○ Change out downtown street lights	\$ 3,443
○ Police Eco-Boost/Fuel Savings	\$ 5,477
○ 5% Insurance Premium Reduction	\$ 75,000
○ Electronics recycling	\$ 1,063
○ Waste Oil/Energy Conversion	\$ 873
○ Battery Recycling	\$ 920
○ Computer Servers	\$ 400
○ Computer HVAC	\$ 19,800
○ Total 2013 Savings	\$118,582.00

- These are Permanent Savings!

The Future of Sustainability

- Projected 2014 Budget Levels
 - Required 80% funding reduction
 - Operating at 20% of previous levels
- Hopefully 2015 Return to Previous Funding Level
 - Continued Success
 - Greater Savings, Employee Incentives, Healthier City

MISSION: 2015-2020?

Comments & Questions?

Mona Menezes
Environmental Specialist
mmenezes@bransonmo.gov